

REMARKS/ARGUMENTS

Claims 1-38 are pending in the subject patent application. Claims 1, 9, 10, 16, 25 and 26 have been amended. New Claims 32-39 have been added.

In the April 5, 2005 Office Action, Claims 1-9, 11-13, 16-25 and 27-29 were rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by U.S. Patent No. 6,160,514 to Judd (hereinafter referred to as "Judd"). Claims 10, 14, 15, 26, 30 and 31 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Judd in view of U.S. Published Patent Application No. 2003/0232600 to Montgomery et al. (hereinafter referred to as "Montgomery et al."). Applicant respectfully requests consideration of the claims in view of the amendments made herein and the remarks provided below.

35 U.S.C. § 102(b) Claim Rejections – Claims 1-9, 11-13, 16-25 and 27-29

On pages 2-3 of the April 5, 2005 Office Action, Claims 1-9, 11-13, 16-25 and 27-29 were rejected for allegedly being anticipated by Judd. For the following reasons, Applicant respectfully disagrees.

A claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131, quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Further, the "identical invention must be shown in as complete detail as is contained in the ... claim." *Id.*, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Judd fails to meet these standards, Applicant respectfully believes that Judd cannot be properly maintained as reference that anticipates Claims 1-9, 11-13, 16-25 and 27-29.

Judd discloses an L-shaped indoor antenna system having a first pair of opposed planar support surfaces and a second support member having a second pair of opposed planar support surfaces. The first and second support members are coupled along a common edge and oriented such that the first pair of planar support surfaces is substantially orthogonal to the second pair of planar support surfaces. A plurality of antennas is mounted to each of the support surfaces of the first and second pairs of supports surfaces. According to Judd, such an antenna system provides omni-directional coverage, thereby avoiding the need to point or orient the antenna to achieve optimal reception. The “L-shape” of the antenna system also allows the antenna system to be installed in a corner of a room.

Comparing Judd to independent Claim 1 of the present application reveals at least the following important distinctions.

First, Judd does not disclose a multi-band antenna system that includes a “reactive circuit element coupled between a second end of [a] transmission means and a PC Card wireless modem”, as independent Claim 1 of the present invention recites. Despite what is asserted in the Office Action, the summation/splitting mechanism 72 and frequency diplexer module 95, whether considered individually or in combination, do not correspond to the “reactive circuit element” recited in independent Claim 1 of the present application. A reactive circuit element is an inductive or capacitive circuit element, or combination thereof. The summation/splitting mechanism 72 and frequency diplexer module 95, whether considered alone or in combination, cannot be properly characterized as an inductive or capacitive element.

Second, the “modem 96” described in column 3, lines 58-64 of Judd cannot be properly characterized as corresponding to the “PC Card wireless mode” term recited in Claim 1. A PC Card wireless modem is a network interface apparatus that allows a computing device (e.g. a laptop computer or other device) to gain wireless access to a wireless communications network (e.g. the PCS or CDMA communications networks). The “modem 96” in Judd does not function in such a manner, and there is no teaching or suggestion that the “modem 96” may be employed as a network interface apparatus to gain access to a wireless communications network. The “modem 96” has nothing to do with assisting a computing device gain access to a wireless communications network. The “modem 96” in Judd only operates to select which “antenna face” (26a and 28a of FIG. 4 or 26b or 28b of FIG. 5) of an L-shaped indoor antenna system has the maximum RF power. Such an operation is totally irrelevant in the context of the present invention. Therefore, despite what is asserted in the Office Action, the “modem 96” cannot be properly characterized as a “PC Card wireless modem”.

Third, Judd fails to disclose how the “reactive circuit element and a loop section of [a] transmission means are configured to operate as a trap for received signals having frequencies within a first frequency band,” as independent Claim 1 of the present application recites. Despite what is asserted in the Office Action, Lines 49-68 of column 3 in Judd do not disclose this subject matter. Column 3, lines 49-68 describe how the splitting/summing device 72 (72a) has the effect of reducing the directional gain of the L-shaped omni-directional antenna system, and how this reduction in directional gain can be overcome by employing a 4:1 RF switch 92 controlled by the modem 96. The modem 96 is configured to control the 4:1 RF switch 92 so that the antenna face (26a and 28a of

FIG. 4 or 26b or 28b of FIG. 5) having the maximum RF power is selected. This operation has nothing to do with a “trap”, which has a variable impedance depending on the frequency of the received signals. Moreover, there is no discussion of a transmission means having a “loop section” in Judd. Accordingly, despite what is asserted in the Office Action, not only does Judd fail to teach a “reactive circuit element”, Judd also fails to teach how a “reactive circuit element and a loop section of the transmission means are configured to operate as a trap for received signals having frequencies within a first frequency band.”

For at least the foregoing reasons, Judd fails to teach each and every element set forth in independent Claim 1 of the present invention, and fails to disclose the identical invention in as complete detail in Claim 1. (See M.P.E.P. § 2131 explanation of the requirements for applying an anticipating reference, including the *Verdegaal Bros.* and the *Richardson v. Suzuki Motor Co.* Federal Circuit requirements discussed above.) Applicant requests, therefore, that that rejection of independent Claim 1, as allegedly being anticipated by Judd, be withdrawn.

Similar reasons as to why independent Claim 1 is not anticipated by Judd are applicable to the rejection of independent Claim 16. For example, independent Claim 16 includes a “reactive circuit element”, which, as discussed above in response to the rejection of independent Claim 1, is not taught by Judd. Judd also fails to disclose a transmission means having a “loop section” or how the “reactive circuit element and [the] loop section of [a] transmission means are configured to operate as a trap for received signals having frequencies within a first frequency band.” Accordingly, for reasons similar to the rejection of independent Claim 1, Applicant respectfully believes that the §

102(b) rejection of independent Claim 16, as allegedly being anticipated by Judd, cannot be properly maintained. Applicant requests, therefore, the rejection of independent Claim 16 also be withdrawn.

Claims 2-9, 11-13, 17-25 and 27-29 were also rejected for allegedly being anticipated by Judd. However, since these claims all depend from either independent Claim 1 or independent Claim 16, which are not anticipated by Judd for at least the reasons set forth above, they too should be in a condition for allowance as depending from allowable base claims. Dependent Claims 2-9, 11-13, 17-25 and 27-29 are also distinguishable from Judd for at least the following reasons.

Claim 2 recited how the “dipole” of the “multi-band antenna system of Claim 1” is “configured to receive signals having frequencies within a second frequency band.” Despite what is asserted in the Office Action, Judd does not teach how its dipole antennas may be configured to receive signals within a second frequency band. Judd does describe how the transmit (Tx) antennas 82, 86 and receive antennas 84, 88 on the antenna faces may have different transmit and different receive bands. However, there is no teaching of a receiving antenna operating in multiple frequency bands.

Claim 3 depends from dependent Claim 2, which depends from independent Claim 1. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 1 and 2 are allowable over Judd. Further, Judd fails to disclose a “multi-band antenna system” where the “first frequency band corresponds to the CDMA 0.86 GHz band” and the “second frequency band corresponds to the PCS 1.92 GHz band”, as specifically recited in Claim 3.

Claim 4 recites how a “ground plane of a printed circuit board of the PC Card wireless modem and/or a conductive housing of the PC Card wireless modem functions as a counterpoise for the antenna apparatus. As discussed above, Judd does not disclose a PC Card wireless modem. Not only does it not disclose a PC Card wireless modem, the reference also fails to disclose a “ground plane” and/or “conductive housing” of a PC Card wireless modem, let alone how such structures may be used as a “counterpoise” for claimed “multi-band antenna system”.

Claim 5 depends from dependent Claim 4, which depends from independent Claim 1. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 1 and 4 are allowable over Judd. Further, Claim 5 recites how the “combined lengths of a pole of the dipole antenna and a portion of the transmission means operate as a monopole antenna for received signals having frequencies within the first frequency band.” Judd fails to teach this subject matter, and there is no explanation in the Office Action provided to support the rejection of Claim 5.

Claim 6 recites how the “multi-band antenna system of Claim 1” further comprises “a matching circuit coupled between first and second poles of the dipole antenna.” In the Office Action, it is asserted that lines 12-17 of column 3 in Judd teaches such subject matter. Applicant respectfully disagrees. Lines 12-17 of column 3 of Judd describe how a multiplicity of antennas formed on multiple faces of the “book” antenna may be formed and designed for correct amplitude and phase matching, in order to generate the desired elevation beam. There is no description of a “matching circuit coupled between first and second dipoles” of an individual dipole antenna.

Claim 7 depends from dependent Claim 6, which depends from independent Claim 1. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 1 and 6 are allowable over Judd. Further, Claim 7 recites how the matching circuit recited in Claim 6 is “configured to operate as a balun”. Judd fails to disclose this subject matter, and there is no explanation in the Office Action provided to support the rejection of Claim 7.

Claim 8 depends from dependent Claim 6, which depends from independent Claim 1. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 1 and 6 are allowable over Judd. Claim 8 also recites how the “matching circuit, the dipole, and a portion of the transmission means are formed on a first printed circuit board”. Judd fails to disclose this subject matter, and there is no explanation in the Office Action provided to support the rejection of Claim 8.

Claim 9 recites how the “reactive circuit element” is formed on a printed circuit board.” As explained above, Judd does not teach a “multi-band antenna system” having “a reactive circuit element coupled between a second end of the transmission means and a PC Card wireless modem.” Further, Judd fails to teach how such a “reactive circuit element” is “formed on a printed circuit board”. Despite what is asserted in the Office Action, Judd does not teach subject matter. The referred to column 3, lines 12-17 only describe how the RF switch 110 may be mounted on a printed circuit board. There is absolutely not teaching of a “reactive circuit element” formed on a printed circuit board.

Claim 11 recites how the “multi-band antenna system” claimed in Claim 1 further comprises a “diversity dipole”. Judd does not disclose how any one of its dipole antennas may be configured as a “diversity dipole”. Indeed, FIG. 5 of Judd, which is relied on to

support the rejection of Claim 11, shows that the dipole antennas are all oriented in the same longitudinal direction.

Claim 12 depends from dependent Claim 9, which depends from independent Claim 1. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 1 and 9 are allowable over Judd. Further, Claim 9 recites that the “multi-band antenna system” of Claim 9 further comprises a “diversity dipole”. Judd does not disclose how any one of its dipole antennas may be configured as a “diversity dipole”. Indeed, FIG. 5 of Judd, which is relied on to support the rejection of Claim 12, shows that the dipole antennas are all oriented in the same longitudinal direction.

Claim 13 depends from dependent Claim 12, which depends from dependent Claim 9, which depends from independent Claim 1. Accordingly, dependent Claim 13 is believed allowable for the reasons expressed above as to why Claims 1, 9 and 12 are allowable over Judd. Further, Claim 13 recites how the “multi-band antenna system” of Claim 12 is “formed on [a] printed circuit board”. To support the rejection of Claim 13, in the Office Action it is asserted that FIG. 5 of Judd shows how a diversity dipole is formed on a printed circuit board. Applicant respectfully disagrees. FIG. 5 does not show a “diversity dipole”, let alone a “diversity dipole formed on [a] printed circuit board.

Claim 17 recites how the “combined lengths of a pole of the dipole antenna, and a portion of the transmission means form a whip antenna capable of receiving signals having frequencies within [a] first frequency band.” In the Office Action it is asserted that Judd discloses such subject matter. Applicant respectfully disagrees. Not only does Judd fail to disclose how its dipole antennas may be configured to receive signals in

multiple bands (as asserted in the rejection), Judd also fails to describe how “combined lengths of a pole of [a] dipole antenna, and a portion of the transmission means form a whip antenna.” Further, there is nothing in the Office Action explaining how Judd teaches such subject matter.

Claim 18 recites how the “dipole” of the “multi-band antenna system of Claim 16” is “configured to receive signals having frequencies within a second frequency band.” Despite what is asserted in the Office Action, Judd does not teach how its dipole antennas may be configured to receive signals within a second frequency band. Judd does describe how the transmit (Tx) antennas 82, 86 and receive antennas 84, 88 on the antenna faces may have different transmit and different receive bands. However, there is no teaching of a receiving antenna operating in multiple frequency bands.

Claim 19 depends from dependent Claim 18, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16 and 18 are allowable over Judd. Further, Judd fails to disclose a “multi-band antenna system” where the “first frequency band corresponds to the CDMA 0.86 GHz band” and the “second frequency band corresponds to the PCS 1.92 GHz band”, as specifically recited in Claim 19.

Claim 20 recites how the “portable communications device” claimed in Claim 16 “comprises a PC Card wireless modem.” In the Office Action it is asserted that lines 24-30 of column 4 in Judd discloses such subject matter. Applicant respectfully disagrees. Lines 24-30 of column 4 of Judd describe how an Ethernet or USB (Universal Serial Bus) cable 120 may be run down a wall corner to a PC 98, or LAN network server. There is absolutely no discussion of a “PC Card wireless modem” in the referred to excerpt of

Judd. Applicant reminds the Examiner that the “modem 96” described earlier in Judd is not a PC Card wireless modem nor is it even equivalent, whether in structure or operation, to a PC Card wireless modem. Further, the connection made to the PC 98 in Judd is by way of wired Ethernet or USB connection. It is not wireless, and the antenna L-shaped antenna structure is incapable of being plugged into a PCMCIA slot of a PC or other computing device, as does a PC Card wireless modem.

Claim 21 depends from dependent Claim 20, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16 and 20 are allowable over Judd. Further, Claim 21 recites how a “ground plane of a printed circuit board of the PC Card wireless modem and/or a conductive housing of the PC Card wireless modem functions as a counterpoise for the antenna apparatus.” As described above, Judd does not disclose a PC Card wireless modem. Not only does Judd not disclose a PC Card wireless modem, Judd also fails to disclose a “ground plane” and/or “conductive housing” of a PC Card wireless modem, let alone how such structures may be used as a “counterpoise” for claimed “multi-band antenna system”.

Claim 22 recites how the “multi-band antenna system of Claim 16” further comprises “a matching circuit coupled between first and second poles of the dipole antenna.” In the Office Action, it is asserted that lines 12-17 of column 3 in Judd teaches such subject matter. Applicant respectfully disagrees. Lines 12-17 of column 3 of Judd describe how a multiplicity of antennas formed on multiple faces of the “book” antenna may be formed and designed for correct amplitude and phase matching, in order to

generate the desired elevation beam. There is no description of a “matching circuit coupled between first and second dipoles” of an individual dipole antenna in Judd.

Claim 23 depends from dependent Claim 22, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16 and 22 are allowable over Judd. Further, Claim 23 recites how the matching circuit recited in Claim 22 is “configured to operate as a balun”. Judd fails to disclose this subject matter, and there is no explanation in the Office Action provided to support the rejection of Claim 23.

Claim 24 depends from dependent Claim 22, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16 and 22 are allowable over Judd. Claim 24 also recites how the “matching circuit, the dipole, and a portion of the transmission means are formed on a first printed circuit board”. Judd fails to disclose this subject matter, and there is no explanation in the Office Action provided to support the rejection of Claim 24.

Claim 25 recites how the “reactive circuit element” is formed on a printed circuit board.” As explained above, Judd does not teach a “multi-band antenna system” having “a reactive circuit element coupled between a second end of the transmission means and a PC Card wireless modem.” Further, Judd fails to teach how such a “reactive circuit element” is “formed on a printed circuit board”. Despite what is asserted in the Office Action, Judd does not teach subject matter. The referred to column 3, lines 12-17 only describe how the RF switch 110 may be mounted on a printed circuit board. There is absolutely not teaching of a “reactive circuit element” formed on a printed circuit board.

Claim 27 recites that the “multi-band antenna system” of Claim 16 further comprises a “diversity dipole”. Judd does not disclose how any one of its dipole antennas may be configured as a “diversity dipole”. Indeed, FIG. 5 of Judd, which is relied on to support the rejection of Claim 27, shows that the dipole antennas are all oriented in the same longitudinal direction.

Claim 28 depends from dependent Claim 25, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16 and 25 are allowable over Judd. Further, Claim 28 recites that the “multi-band antenna structure” claimed in Claims 25 and 16 further comprises a “diversity dipole”. Judd does not disclose how any one of its dipole antennas may be configured as a “diversity dipole”. Indeed, FIG. 5 of Judd, which is relied on to support the rejection of Claim 27, shows that the dipole antennas are all oriented in the same longitudinal direction.

Claim 29 depends from dependent Claim 28, which depends from dependent Claim 25, which depends from independent Claim 16. Accordingly, it is believed allowable for the reasons expressed above as to why Claims 16, 25 and 28 are allowable over Judd. Further, Claim 29 recites how the “multi-band antenna system” of Claim 28 is “formed on [a] printed circuit board”. To support the rejection of Claim 29, in the Office Action it is asserted that FIG. 5 of Judd shows how a diversity dipole is formed on a printed circuit board. Applicant respectfully disagrees. FIG. 5 does not show a “diversity dipole”, let alone a “diversity dipole formed on [a] printed circuit board.”

35 U.S.C. § 103(a) Claim Rejections – Claims 10, 14, 15, 26, 30 and 31

On pages 3-4 of the Office Action, Claims 10, 14, 15, 26, 30 and 31 were rejected for allegedly being obvious over Judd in view of Montgomery et al. For at least the following reasons, Applicant respectfully disagrees.

Claim 10 depends from dependent Claim 8, which depends from dependent Claim 6, which depends from independent Claim 1. Accordingly, Claim 10 derives patentability for at least the same reasons dependent Claims 6 and 8 and independent Claim 1 do. (See above.)

Claim 14 depends from dependent Claim 10, which depends from dependent Claim 8, which depends from dependent Claim 6, which depends from independent Claim 1. Accordingly Claim 14 derives patentability for at least the same reasons Claims 1, 6, 8 and 10 do. (See above.)

Claim 15 depends from dependent Claim 14, which depends from dependent Claim 10, which depends from dependent Claim 8, which depends from dependent Claim 6, which depends from independent Claim 1. Accordingly Claim 14 derives patentability for at least the same reasons Claims 1, 6, 8, 10 and 14 do. (See above.)

Claim 26 depends from dependent Claim 24, which depends from dependent Claim 22, which depends from independent Claim 16. Accordingly Claim 26 derives patentability for at least the same reasons Claims 16, 22 and 24 do. (See above.)

Claim 30 depends from dependent Claim 26, which depends from dependent Claim 24, which depends from dependent Claim 22, which depends from independent Claim 16. Accordingly, Claim 30 is believed allowable for the reasons expressed above as to why Claims 16, 22, 24 and 26 are allowable over Judd. (See above.)

Claim 31 depends from dependent Claim 30, which depends from dependent Claim 26, which depends from dependent Claim 24, which depends from dependent Claim 22, which depends from independent Claim 16. Accordingly, Claim 30 is believed allowable for the reasons expressed above as to why Claims 16, 22, 24, 26 and 30 are allowable over Judd. (See above.)

Modifying Judd by Montgomery et al. does not alter these reasons of patentability of Claims 10, 14, 15, 26, 30 and 31. Accordingly, Applicant respectfully believes that dependent Claims 10, 14, 15, 26, 30 and 31 are also in a condition for allowance.

New Claims – Claims 32-39

New Claims 32-39 are also believed to be allowable over the prior art of record for at least the same or similar reasons why Claims 1-31 are allowable over the prior art of record.

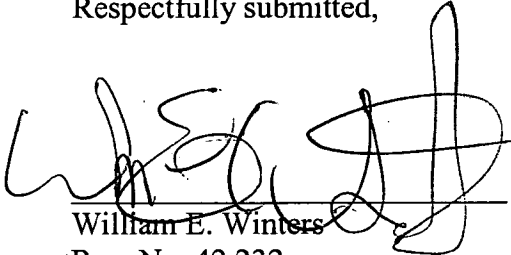
CONCLUSION

For at least the foregoing reasons, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner has any further questions or comments concerning the amendments made herein, he is encouraged to telephone the undersigned at 408-282-1857.

Respectfully submitted,

Dated: JULY 5, 2005


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